



**Fermi National Accelerator Laboratory
Batavia, IL 60510**

FERMI MAIN INJECTOR

3Q60 MAGNET FINAL INSPECTION & SHIPMENT TRAVELER

Reference Drawing(s)

**3Q60 Magnet Assembly With Beam Tube
5520-ME-331965**

Budget Code: MYI

Project Code: MAF

Released by:

Date:

Prepared by: W. Isiminger

Title	Signature	Date
TD / E&F Process Engineering	<i>Tim</i>	5/14/98
TD / E&F Assembly	<i>[Signature]</i>	5/14/98
TD / E&F Tooling	<i>[Signature]</i>	5/14/98
TD / E&F Fabrication Manager	<i>[Signature]</i>	5/14/98
TD / E&F Device Design	<i>[Signature]</i>	5/15/98
TD / E&F Department Head	<i>[Signature]</i>	5/14/98
TD / QA/QC Manager	<i>[Signature]</i>	5/18/98
TD / Main Injector Magnet Project Manager	<i>[Signature]</i>	5/14/98
BD / Main Injector Magnet Liaison Project Physicist	<i>[Signature]</i>	5/14/98

Revision Page

<u>Revision</u>	<u>Revision Description</u>	<u>Date</u>
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Ensure appropriate memos and specific instructions are placed with the traveler before issuing the sub traveler binder to production.

1.0 General Notes

- 1.1 White (Lint Free) Gloves (Fermi stock 2250-1800) or Surgical Latex Gloves (Fermi stock 2250-2494) shall be worn by all personnel when handling all product parts after the parts have been prepared/cleaned.
- 1.2 All steps that require a sign-off shall include the Technician/Inspectors first initial and full last name.
- 1.3 No erasures or white out will be permitted to any documentation. All incorrectly entered data shall be corrected by placing a single line through the error; initial and date the error before adding the correct data.
- 1.4 All Discrepancy Reports issued shall be recorded in the left margin next to the applicable step.
- 1.5 All personnel performing steps in this traveler must have documented training for this traveler and associated operating procedures.
- 1.6 Personnel shall perform all tasks in accordance with current applicable ES&H guidelines and those specified within the step.
- 1.7 Cover the magnet assembly with green Herculite (Fermi stock 1740-0100) when not being serviced or assembled.

2.0 Parts Kit List

- 2.1 Attach the completed Parts Kit List for the 3Q60 Magnet Final Inspection & Shipment to this traveler. Ensure that the serial number on the Parts Kit List matches the serial number of this traveler. Verify that the Parts Kit received is complete.

Process Engineering/Designee

Date

3.0 Serial Number Verification

- X 3.1 Verify and record the serial number and weight (Lbs.) stenciled on the magnet in 1" characters per the 3Q60 Magnet Assembly (ME-331965 and ES-331729).

Note(s):

The serial numbers should match serial number at the bottom of this traveler.

EXAMPLE

"FMI 3Q60 MAGNET"
SERIAL # QQC-XXX
MAGNET WEIGHT 4000 LBS

Serial number stenciled on the magnet _____

Weight stenciled on the magnet _____

Visually inspect the magnet for damage.

Inspector

Date

4.0 Magnet Assembly Inspection

- X 4.1 Verify that the body of the magnet has been painted as per the 3Q60 Magnet Assembly (ME-331965) with Orange Paint (MA-351017). Ensure that no survey holes or associated items have been painted or have paint on them.

Inspector

Date

- X 4.2 Verify that the Manifold Cover (MC-351558) has been attached to the magnet and that the end cans of the magnet have been painted as per the 3Q60 Magnet Assembly print (ME-331965) with Epoxy Paint (Resin MA-274444 and Catalyst MA-274445).

Inspector

Date

- X 4.3 Verify that the magnet water passages have been purged using house air, until no water is present in the manifold. Ensure that the Cap Plugs (MA-125284) are installed on the water passages.


Note(s):

Any Elbow Union Parts not installed on the magnet (nuts, ferrules, etc.) are to be placed inside the Parts Bag (MA-318790) and attached to the magnet.

Inspector

Date

- X 4.4 Affix the completed Generic Magnet Identification Labels (MA-318490) (Qty. 1) on the magnet as per the 3Q60 Magnet Assembly (ME-331965). Affix a completed Generic Magnet Identification Label (MA-318490) to this page or complete the facsimile below:

 FERMI NATIONAL ACCELERATOR LABORATORY TECHNICAL SUPPORT			
FMI 3Q60			
Serial # _____			
Drawing #: ME-331965			
Electrical Data		Water Flow Test	
Resistance	mΩ	60 ΔP	
Ls	Q	100 ΔP	
1 KHz	mH	Hipot 1 Kvdc Coil To Ground	
100 Hz	mH		
Date Completed _____		Est. Weight : <u>4,000 Lbs.</u>	

Partially Completed
Generic Magnet Identification Label (MA-318490)

Inspector _____

Date _____

5.0 Documentation Verification & DR List

XX 5.1 Verify that the FMI 3Q60 Master Traveler is assembled and completed for this magnet (except for this traveler).

Component Nomenclature (Part Number)	Traveler Title (Specification No.)	Rev.	Component Serial Number	Completion Date	Initial
3Q60 Magnet Quarter Yoke Assembly (MC-331961)	3Q60 Magnet Quarter Yoke Assembly Traveler (TR-333160)				
3Q60 Magnet Quarter Yoke Assembly (MC-331961)	3Q60 Magnet Quarter Yoke Assembly Traveler (TR-333160)				
3Q60 Magnet Quarter Yoke Assembly (MC-331961)	3Q60 Magnet Quarter Yoke Assembly Traveler (TR-333160)				
3Q60 Magnet Quarter Yoke Assembly (MC-331961)	3Q60 Magnet Quarter Yoke Assembly Traveler (TR-333160)				
3Q60 Outer Coil Layout (ME-331982)	3Q60 Outer Coil Winding Traveler (TR-333290)				
3Q60 Inner Coil Layout (ME-331983)	3Q60 Inner Coil Winding Traveler (TR-333289)				
3Q60 Inner Coil Layout (ME-331983)	3Q60 Inner Coil Winding Traveler (TR-333289)				
3Q60 Outer Coil Layout (ME-331982)	3Q60 Outer Coil Winding Traveler (TR-333290)				
3Q60 Outer Coil Layout (ME-331982)	3Q60 Outer Coil Winding Traveler (TR-333290)				
3Q60 Inner Coil Layout (ME-331983)	3Q60 Inner Coil Winding Traveler (TR-333289)				
3Q60 Inner Coil Layout (ME-331983)	3Q60 Inner Coil Winding Traveler (TR-333289)				
3Q60 Outer Coil Layout (ME-331982)	3Q60 Outer Coil Winding Traveler (TR-333290)				
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3Q60 Outer Coil Layout (ME-331982)	3Q60 Outer Coil Winding Traveler (TR-333290)				

Component Nomenclature (Part Number)	Traveler Title (Specification No.)	Rev.	Component Serial Number	Completion Date	Initial
3Q60 Half-Coil Assembly 3Q60 Complete Coil Assembly (MD-331984/MD-331966)	3Q60 Coil Assembly/Insulation Traveler (TR-333291)				
3Q60 Half-Coil Assembly 3Q60 Complete Coil Assembly (MD-331984/MD-331966)	3Q60 Coil Assembly/Insulation Traveler (TR-333291)				
3Q60 Half-Coil Assembly 3Q60 Complete Coil Assembly (MD-331984/MD-331966)	3Q60 Coil Assembly/Insulation Traveler (TR-333291)				
3Q60 Half-Coil Assembly 3Q60 Complete Coil Assembly (MD-331984/MD-331966)	3Q60 Coil Assembly/Insulation Traveler (TR-333291)				
3Q60 Magnet Quarter Yoke & Coil Assembly Quadrant 1 & 3 3Q60 Magnet Quarter Yoke & Coil Assembly Quadrant 2 & 4 3Q60 Half Yoke Assembly (ME-331962/ME-331963/ME-331964)	3Q60 Half Magnet Assembly Traveler (TR-333292)				
3Q60 Magnet Quarter Yoke & Coil Assembly Quadrant 1 & 3 3Q60 Magnet Quarter Yoke & Coil Assembly Quadrant 2 & 4 3Q60 Half Yoke Assembly (ME-331962/ME-331963/ME-331964)	3Q60 Half Magnet Assembly Traveler (TR-333292)				
3Q60 Magnet Assembly With Beam Tube 3Q60 Magnet Manifold Assembly (ME-331965/ME-351004)	3Q60 Magnet Assembly Traveler (TR-333293)				
3Q60 Magnet Lead End Cover Assembly 3Q60 Magnet Return End Cover Assembly 3Q60 Magnet Assembly With Beam Tube 3Q60 Quadrupole Magnet Insulation And Impregnation (MD-351005/MD-351006) (ME-331965/ES-331790)	3Q60 Magnet Impregnation And Final Assembly Traveler (TR-333294)				
3Q60 Magnet Assembly With Beam Tube (ME-331965)	3Q60 Magnet Final Inspection and Shipment Traveler (TR-333295)				

Note(s):

The Master Traveler is to include all the Component Sub Travelers listed above.

Process Engineering/Designee

Date

XX 5.2 Compile and attach the complete DR List for the magnet.

Process Engineering/Designee

Date

6.0 Production Complete

- XXX 6.1 Process Engineering verify that the FMI 3Q60 Magnet Final Inspection & Shipment Traveler (5520-TR-333295) is accurate and complete. This shall include a review of all steps to ensure that all operations have been completed and signed off. Ensure that all Discrepancy Reports, Nonconformance Reports, Repair/Rework Forms, Deviation Index and dispositions have been reviewed by the Responsible Authority for conformance before being approved.

Comments:

Process Engineering/Designee

Date

- XXX 6.2 Assembly verify that the FMI 3Q60 Magnet Final Inspection & Shipment Traveler (5520-TR-333295) is accurate and complete. This shall include a review of all steps to ensure that all operations have been completed and signed off. Ensure that all Discrepancy Reports, Nonconformance Reports, Repair/Rework Forms, Deviation Index and dispositions have been reviewed by the Responsible Authority for conformance before being approved.

Comments:

Assembly/Designee

Date

- 7.0 This magnet is authorized to ship (Sign "OK to Ship" Tag).

Fabrication Manager/Designee

Date

- 8.0 Attach the Process Engineering "OK to Ship" Tag on the magnet. Attach a copy of the "OK to Ship" Tag to this traveler.

Process Engineering/Designee

Date